Searches for User *cnguyen1* (Count = 9610)

Queries 9561 through 9610.

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S #	Updt	Database	Query	Time	Comment
S9610	U	EPAB,JPAB,DWPI,TDBD	gps and (map$ with location) and database and filter$	2004-10-31 15:04:09	
S9609	U	EPAB,JPAB,DWPI,TDBD	gps and (map$ with location) and database and filter$	2004-10-31 14:36:19	
S9608	U	EPAB,JPAB,DWPI,TDBD	(return$ with (middle$ or third$ or distributor or seller or customer)) and @adL17 and (customer same client)	2004-10-31 13:58:04	
S9607	U	EPAB,JPAB,DWPI,TDBD	(return$ with (middle$ or third$ or distributor or seller or customer)) and @ad<=19991230	2004-10-31 13:57:14	
S9606	U	USPT	705/?.ccls. and ((send$ or return$) with (middle$ or third$ or distributor or seller)) and @adL1 and (customer same client) not 705/22,26,27,28.ccls. and ((send$ or return$) with (middle$ or third$ or distributor or seller)) and @adL1 and (return$ with (middle$ or distributor or seller)) and (customer same client)	2004-10-31 13:34:38	
S9605	U	USPT	705/?.ccls. and ((send$ or return$) with (middle$ or third$ or distributor or seller)) and @adL1 and (customer same client)	2004-10-31 13:34:28	
S9604	U	USPT	705/?.ccls. and ((send$ or return$) with (middle$ or third$ or distributor or seller)) and @adL1	2004-10-31 13:33:59	
S9603	U	USPT	705/?.ccls.	2004-10-31 13:33:46	
S9602	U	USPT	705/22,26,27,28.ccls. and ((send$ or return$) with (middle$ or third$ or distributor or seller)) and @adL1 and (return$ with (middle$ or distributor or	2004-10-31 13:32:19	

			6266612.pn. or 5938721.pn.	31 07:44:23
S9578	U	USPT	6782316.pn.	2004-10-31 07:38:14
S9577	U	USPT	6029764.pn.	2004-10-31 07:36:51
S9576	U	USPT	4762194.pn. or 4386791.pn.	2004-10-31 07:34:59
S9575	U	USPT	6786803.pn.	2004-10-31 07:33:20
S9574	U	USPT	6786803.pn,	2004-10-31 07:33:11
S9573	U	USPT	6269361.pn.	2004-10-31 07:24:06
S9572	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) AND (SPEED$ AND DISTANC$)	2004-10-30 16:05:43
S9571	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) AND (SPEED$ SAME DISTANC$)	2004-10-30 16:05:19
S9570	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) and (down$ or computer$ or processor or micro$)	2004-10-30 15:48:58
S9569	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) and (down$ or computer$ or processor or micro$)	2004-10-30 15:48:49
S9568	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) and (down$ or computer$ or processor or micro$)9	2004-10-30 15:48:35
S9567	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) and (power$)	2004-10-30 15:42:48
S9566	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio) and (accelerat$ and speed$ and distanc$ and torqu$)	2004-10-30 15:21:34
S9565	U	USPT	(obd$ or (onboard adj diagnostic$) and	2004-10-

			sensor$ and speed$) and display$ and (gear$ with ratio) and (hp$ or horse$)	30 15:19:10
S9564	U	USPT	(obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio)	2004-10-30 15:03:30
S9563	U	USPT	701/33.ccls. and (obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$ and (gear$ with ratio)	2004-10-30 15:03:06
S9562	U	USPT	701/33.ccls. and (obd$ or (onboard adj diagnostic$) and sensor$ and speed$) and display$	2004-10-30 15:02:43
S9561	U	USPT	701/33.ccls.	2004-10-30 15:02:31

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L2: Entry 1 of 2 File: USPT Nov 20, 2001

DOCUMENT-IDENTIFIER: US 6321158 B1
TITLE: Integrated routing/mapping information

Abstract Text (1):
An Integrated Routing/Mapping Information System (IRMIS) links desktop personal computer cartographic applications to one or more handheld organizer, personal digital assistant (PDA) or "palmtop" devices. Such devices may be optionally equipped with, or connected to, portable Global Positioning System (GPS) or equivalent position sensing device. Desktop application facilitates user selection of areas, starts, stops, destinations, maps and/or point and/or route information. It optionally includes supplemental online information, preferably for transfer to the PDA or equivalent device. Users' options include route information, area, and route maps. Maps and related route information are configured with differential detail and levels of magnitude. Used in the field, in conjunction with GPS receiver, the PDA device is configured to display directions, text and map formats, the user's current position, heading, speed, elevation, and so forth. Audible signals identifying the next turn along the user's planned route are also provided. The user can pan across maps and zoom between two or more map scales, levels of detail, or magnitudes. The IRMIS also provides for "automatic zooming," e.g., to show greater detail or closer detail as the user approaches a destination, or to larger scale and lower resolution to show the user's overall planned route between points of interest. The IRMIS also enables the user to mark or record specific locations and/or log actual travel routes, using GPS position information. These annotated location marks and/or "breadcrumb" or GPS log data can be saved, uploaded, displayed, or otherwise processed on the user's desktop geographic information or cartographic system. The IRMIS application and data may be distributed online and/or in tangible media in limited and advanced manipulation formats.

Brief Summary Text (15):
It is an object of the present invention to provide a new integrated routing/mapping information system (IRMIS) capable of enabling the mating and cooperation between desktop and handheld devices, including the automatic updating of related databases whenever the desktop PC and handheld PDA link together. The PDA or handheld personal organizer may be optionally linked to a GPS receiver. It is also an object of the present invention to provide the means to take advantage of the strengths of the desktop or home-base application which provides wider geographical coverage and a fully implemented map/route/point-of-interest (poi) cartographic system, which desktop enables user selectivity or customization of map and route information--optionally tapping into online information. It is another object of the present invention to create data-cutting alternatives such that certain user selections of geographic area, start, finish, POIs, levels of detail or map magnitudes may be effectively downloaded to the PDA/GPS that produce compact map and/or route information "packages" comprising black-white bitmaps, text directions lists, point information organized in differential magnitude configurations which e.g. provide more detail and particular kinds of information around waypoints, less detail and perhaps more major road driving information along the routes between waypoints. It is a further object of the present invention to provide a means to enable a PDA to display text directions and maps (without GPS), serving similar functions to map/itinerary travel plan printouts and to facilitate

in a PDA/GPS combination a map display of user's current position, and/or prompting and beeped warnings relative to text directions, as well as heading, distance, speed and other real time GPS data. The present invention is further designed to facilitate in a PDA/GPS configuration location marking and breadcrumb or GPS log functions which can be displayed on the PDA and/or uploaded, displayed, and otherwise processed back at the home-base desktop. Yet a further object of the present invention is the development of a PDA/GPS application can include programming whereby the GPS output controls map/point/route information content and levels of detail--as illustrated by "automatic zoom" upon arrival at area mapped at lesser/greater level of detail or, when a GPS receiving system "senses" that the vehicle has slowed down or stopped, map and point information displays automatically refocus or "look about" to see about restaurants, lodgings or other area attractions.

Detailed Description Text (4):
Alternative embodiments could include other input devices e.g. voice recognition system, joystick, touch-screen, scanner for printed map input, simplified keypad, etc., not represented here. FIG. 1A discloses IRMIS 100 implemented on a single, stand-alone, desktop style, personal computer. The software technology, which facilitates interactivity between routing and multimedia, also works on a more portable laptop or notebook computer, a handheld personal digital assistant (PDA), embedded in a travel planning appliance or an in-vehicle navigation system, as well as on mainframes of various kinds, distributed work stations, or networked systems. Alternatively, users can also operate IRMIS 100 from a remote interface through wireless or hard-wire links connecting with a distant computer system or a central service bureau as shown at 109.

Detailed Description Text (23):
FIG. 1A1 also shows connection of a portable IRMIS device to a GPS or Global Positioning System peripheral device. DeLorme Publishing Company, Inc., for example, provides GPSTRIPMATE.TM. and EARTHMATE.TM. GPS receiver accessories for personal computers that provide data on current position, altitude based on radio signals from a set of satellites. The GPS receivers further provide very exact date/time information and compute information including the direction and rate of travel, time and distance to and from start or finish or intermediate waypoints along a planned travel route or course. Alternative position-sensing devices include loran, other radio location, dead-reckoning, and hybrid systems.

Detailed Description Text (31):
You can send your maps and Route Directions from Topo USA to a handheld computer to take with you as you travel. The same maps and directions that appear in Topo USA will be displayed on your handheld computer in DeLorme's Solus.TM. Pro.

Detailed Description Text (35):
Solus.TM. Pro is a separate application that allows you to integrate features of Topo USA with a handheld computer. You can send your maps and Route Directions from Topo USA to a handheld computer to take with you as you travel. The same maps and directions that appear in Topo USA will be displayed on your handheld computer.

Detailed Description Text (44):
Sending to a Handheld Computer

Detailed Description Text (45):
You can send your maps and Route Directions from Topo USA to a 3Com.RTM., Palm Computing.RTM. or Windows.RTM. CE handheld computer to take with you as you travel. The same maps and directions that appear in Topo USA will be displayed on your handheld computer in DeLorme's Solus.TM. Pro application.

Detailed Description Text (74):
There are two types of maps that you can send from Topo USA--map views and route

maps.

Detailed Description Text (149):
There are two types of maps that you can send from Topo USA--map views and route maps.

Detailed Description Text (225):
FIG. 1C also reveals the basic user interface, including a higher magnitude or closer scale map, as shown at 135. Compared to FIG. 1B, FIG. 1C offers a main electronic map display with more detail including geometric symbols in small rectangles under "Seattle" for example. These symbols represent the availability of supplemental travel information on specific types of locations e.g. Hotels, Campgrounds, Restaurants and Points of Interest. One such symbol indicating a realtime or recorded location as sensed by a GPS receiver interfacing with IRMIS is shown at 136a. As disclosed hereafter, the user can access and manipulate the added multimedia travel information by various mouse or keyed commands.

Detailed Description Text (246):
Similarly, pure multimedia can commence at 204 and stop at 279, unfolding entirely within block 209, without reference to or interaction with the routing subsystem 205. The term multimedia in this context refers to a broad range of audible, visible, legible, or otherwise humanly perceptible data or information as stored, processed, output and transmitted within and between computer systems. The GIS at 201, underlying the invention 200, stores, retrieves, manipulates and manages discrete units or items of information in various media in relation to geographic coordinates. Block 209 in FIG. 2 illustrates a multimedia database subsystem for flexible, user controlled, processing and presentation of located information in various media and formats including alphanumeric data, text, graphics, still or moving imagery, and sound, etc. which can be separate from routing.

Detailed Description Text (325):
In the simplified embodiment of IRMIS the user can choose to browse one or more of the following lists: (1) Points of Interest, i.e., tourist or cultural attractions; (2) Hotels; (2) Campgrounds; and (3) Restaurants. Alternative embodiments incorporate a broader range of well-known techniques for storage, retrieval and correlation of geographic or cartographic data. For example, customer and sales prospect information can be stored in a relational database linking geographic locations with various personal, business and financial data. Such a database would be useful for diverse sales, service, delivery, property survey and security functions, particularly to prepare travel or route plans with multimedia digital photos of valued prospects or real estate. Utilizing such a relational customer database, sales force personnel can evaluate and locate prospects and established accounts needing a sales call, then extract the pertinent street addresses as waypoint input in order to prompt computation of an efficient, comprehensive route for making a round of sales calls.

Detailed Description Text (326):
Similarly, service and delivery personnel can plan their work for the day or the week on the road. Appropriate databases can help identify prime properties or security trouble spots. Real estate or security agents can input the street addresses or other location identifiers from the database in order to compose a waypoint list as input for the computation of an optimal route encompassing the properties of interest to the agents. With the waypoint list at step 411 and the background map display, alternate embodiments of the invention incorporate a variety of well-known databasing methodologies in order to enable the user to design, implement, output and further process diverse searches for waypoint input. In like fashion, waypoint lists can be memorized and recalled for later use or modification.

Detailed Description Text (327):

Such service and delivery personnel will find the IRMIS PDA and/or PDA/GPS devices particularly useful. After using the IRMIS desktop for more complicated client and/or address list prccessing, and one or more iterations of related route-planning, the delivery or sales call route(s) for the day or week can be selected, refined, compacted and transferred to compatible portable IRMIS PDA or PDA/GPS devices, as detailed particularly relatively to FIGS. 2A and 5D-5F in this disclosure. Then, the sales or service workers can take the IRMIS PDA or PDA/GPS device--loaded with one or more sets of map, route and/or point information, along on the road, e.g., for route guidance. Moreover, the portable IRMIS devices can be used in the field to track actual paths of travel, to mark locations, and/or for point information annotations, which data as recorded at remote locations can be transferred to the IRMIS home-base desktop for further display and processing, as detailed herein particularly relative to FIGS. 1A3 and 2B.

Detailed Description Text (342):
The present invention facilitates other forms and methods to attach information about locations. For example, to enhance a hardcopy travel plan for making sales calls on the road, step 459 facilitates attaching digital photos of sales prospects beside marginal notes detailing their name, personal interests and past purchasing history. This located information aids the user not only to find sales prospects' locations but also to recognize the prospects' faces, remember names and create a more effective and personable impression. Similar attached photographic imagery proves useful with various travel plans: (1) photos of landmarks as navigation aids; (2) digital pictures of drop-off sites, loading docks and other shipping terminal facilities to aid truckers and other delivery personnel; (3) images of industrial facilities, homes, buildings and land as seen from the road to enhance travel plans for real estate surveys, private security, public safety, etc.; and (4) attached digital photos enhance scenic or sightseeing travel plans. FIG. 1N illustrates attached digital photos of people and property. Attached images of faces, places or other located content are not limited to still digital photo imagery except in hardcopy output. The system enables attachment of videos, extensive alphanumerical text or voice information about places or POIs, or situated music or natural sounds to map/route displays and electronic output.

Detailed Description Text (376):
FIGS. 6A through 8E depict routing/multimedia operations which are preferably performed upon IRMIS desktop or home-base platforms with their larger computing power and access to more extensive geographically-related databases. Moreover, the route-related multimedia presentations described relative to FIGS. 6A-8E, while advantageous for travel planning, are not essential operations on the IRMIS desktop in the preparation of travel plan output from which map, route and/or pint information datasets can be cut for use on portable IRMIS PDA or PDA/GPS devices. Portable information packages or datasets, according to the present IRMIS invention, preferably are cut from desktop IRMIS travel plans comprising map, route and/or point information concerning at least one starting pint and one destination on a proposed, computed or actual route of travel. The present IRMIS invention can further comprise information recorded on PDA or PDA/GPS devices at remote locations in the field. For example, users of portable IRMIS PDAs can make annotations about geographic locations and travel routes; and IRMIS PDA/GPS devices facilitate marking locations, tracking or logging "breadcrumbs" or series of points representing actual travel paths, plus date/time/lat-long stamping of user annotations and/or digital photos made in conjunction with the PDA/GPS. Thereafter, such information gathered on one or more portable IRMIS devices can be transferred into the IRMIS desktop or central dispatch system for further processing or display. For example, such information can be used to update real estate, security service, sales/delivery route, etc. databases; such information can be used to display a historical record or replay of part or all of an actual trip; and/or such information can be incorporated within the IRMIS desktop GIS database for use in future travel planning or multimedia/routing operations and presentations.

Detailed Description Text (378):
FIGS. 6A and 6B illustrate the steps whereby IRMIS transforms routing output or a waypoint list into a list of POIs. In relation to FIG. 2, such transformations take place in the interaction subsystem 207. Waypoint lists are transferred via path 233. Pure routing output is conveyed through path 261. Routing output combined with prior multimedia becomes involved in the processes depicted in FIGS. 6A and 6B by way of path 267 in FIG. 2. In relation to FIG. 4, these same transfers pass through connector A as also revealed in FIG. 6A. In FIG. 4, waypoint input approaches A by means of step 431. Pure or combined routing output is delivered to A via step 471. FIG. 5, particularly the drawing of the circle methodology at 526, provides background on the cartographic data structures involved in FIGS. 6A and 6B.

Detailed Description Text (403):
Step 811 determines whether the current POI is the last item on the current POI list subject to a Show/Tell All command. If the process revealed in FIG. 8A has reached the last item on the current POI list, then the forward slide option or button is dimmed or turned off in step 812. Step 812 is a housekeeping matter. It makes no sense for the user to try and call for the next item on the POI list when the last item on the POI list has already been reached.

Detailed Description Text (409):
Alternate embodiments of the present invention additionally facilitate editing and amendment of text attachments, attachment of selected visual images or audio output, and the insertion or input of new or supplemental multimedia located information through obvious, routine state of the art programming techniques for storage, retrieval and modification of multimedia data. For example, as detailed in relation to FIG. 4 and illustrated in FIG. 1N, embodiments for sales, real estate or security agents attach digital photo images, or even video clips, of particular properties or people at the appropriate locations on specialized travel plan outputs. Available technology further permits attachment of audio messages to travel plan output at relevant locations. Emergency or delivery personnel can recall and hear crucial client messages or instructions in relation to the known or estimated location of an emergency or delivery event. Relative to specific geographic locations, personal snapshots or video, voice/audio experiences recorded on tape or text recollections can be input, stored and recalled, utilizing the present invention as a digital travel album. Such diverse contents and media can be modified, revised and composed selectively together employing obvious, state of the art techniques for the computerized manipulation of interrelated text, graphic imagery or audio data.

Detailed Description Text (410):
The present IRMIS invention further comprises information recorded on PDA or PDA/GPS devices at remote locations in the field. For example, users of portable IRMIS PDAs can make annotations about geographic locations and travel routes, and IRMIS PDA/GPS devices facilitate marking locations, tracking or logging "breadcrumbs" or series of points representing actual travel paths, plus date/time/lat-long stamping of user annotations and/or digital photos made in conjunction with the PDA/GPS. Thereafter, such information gathered on one or more portable IRMIS devices can be transferred into the IRMIS desktop or central dispatch system for further processing and display. For example, such information can be used to update real estate, security service, sales/delivery route, etc., databases; such information can be used to display a historical record or replay of part or all of an actual trip, and/or such information can be incorporated within the IRMIS desktop GIS database for use in future travel planning or multimedia/routing operations and presentations.

Detailed Description Text (411):
Particularly for the preferred embodiments of the present invention distributed on read only CD-ROMs, a Replace function facilitates or enhances usage as a digital travel album and the flexible manipulation of multimedia, as well as updating of

the GIS database. The Replace function stores and manages added or updated information on the hard drive or other equivalent memory devices. By routine means for coordinating various databases or memory devices, taking into account the geographic coordinates or other prominent information attributes such as the time and date of data input, the Replace function further overwrites or amends fixed information on the CD-ROM with added, updated or corrected data, or deletions thereof, including cartography, text, audio or pictures. This facilitates for example correction of highway data reflecting new road construction, other updating and amendments of mapping, multimedia and routing data, addition of personalized annotations or images in the manner of a diary or photo album as well as the selective editing and recomposing of the multimedia substance and forms for presentations and attachments. In summary, the Replace function offers the advantages of cheap massive permanent CD-ROM storage in conjunction with the flexibility and modifiability of read/write storage devices such as hard drives and flash memory.

Detailed Description Paragraph Table (1):
To send a route 1. Be sure that the Solus Pro application is installed on both your desktop computer and your handheld computer. 2. Create your route in Topo USA. 3. Click the Send Route button in the Advanced Routing dialog box. 4. The Send Route dialog box appears. 5. Select the desired options (i.e., current map view, route map and Route Directions) and the type of platform. 6. Click the Preferences . . . button to set your preferences for the individual devices. 7. Click OK. 8. Topo USA creates the appropriate files and displays a message box telling you where they were saved. The default location is C:.backslash.DeLorme Mobile Maps. 9. Transfer the files to your handheld computer according to the protocol outlined in its user's guide. 10. When the transfer is complete, open the Solus Pro application on your handheld computer by tapping its icon. NOTE: You can send the current map view without creating a route. Adjust the map view to the desired location and click the Send Route tool. NOTE: If you open a previously saved route to send to a handheld computer, you must be using the appropriate CD for the region containing the route.

Detailed Description Paragraph Table (2):
To initialize DeLorme's GPS receiver: 1 Connect your organizer to DeLorme's GPS receiver with DeLorme's Palm Computing adapter cable (available separately from DeLorme). 2. After you have sent your route to the handheld, turn on your organizer and tap the Applications button on the screen to access the application picker. 3. Tap the Solus icon to open the application. 4. Tap the Menu button. The Solus Pro menus appear at the top of the screen. 5. Tap the Mode menu option and then tap Initialize to access the Initialization mode. 6. Tap the Device drop-down list and use the up and down arrows to select your GPS receiver. 7. Tap the State drop-down list and use the up and down arrows to select your current location. You can also use the organizer's scroll buttons to move through the state list. NOTE: After the first initialization, the State drop-down list defaults to Last (representing your last location or fix). If you are within the same vicinity as your last fixed position, you should use the Last option to speed up the initialization process. If you have a map loaded in Solus, you can select the Map Center option to use the map's center coordinates to initialize. 8. A stream of data at the bottom indicates that you are receiving satellite information. The symbol in the upper right corner indicates your GPS status. A circle with a line through it means that DeLorme's GPS receiver has not been detected or you are not receiving enough information to determine a fix. The transmitting symbol indicates that DeLorme's GPS receiver is acquiring satellite information, but is not yet receiving sufficient satellite data to determine your position. This message is displayed while DeLorme's GPS receiver is acquiring satellite data and can take several minutes. "2-D" indicates that you are receiving data, but it is not sufficient to determine your elevation. "3-D" indicates that you are receiving ample data and have a good fix. 9. Tap the DST option if daylight saving time is currently in effect where you are. The second line displays the offset for your time zone from the Greenwich Mean Time. 10. A

stream of data at the bottom of the screen indicates that you are receiving signals from satellites. 11. When the status is "3-D", tap the OK button to close out of the Initialization mode. 12. Tap the Menu button on your organizer. The Solus Pro menus appear at the top of the screen. 13. Tap the Mode menu option and select which mode (i.e., Directions, Position, Navigate or Map) you want to view. 14. When you want to stop tracking, tap the Stop button in the Position mode (this will help save your organizer's batteries). A solid circle in the upper right corner indicates that you are not tracking. You can tap the Start button in the Position mode to resume tracking. NOTE: In order to conserve batteries, be sure to disconnect the adapter cable when not using DeLorme's GPS receiver with your organizer.

Detailed Description Paragraph Table (3):
To track: 1. Connect your organizer to DeLorme's GPS receiver with DeLorme's Palm Computing adapter cable (available separately from DeLorme). 2. After you have sent your route to the organizer, turn it on and tap the Applications button on the screen to access the application picker. 3. Tap the Solus icon to open the application. 4. Tap the Menu button. The Solus Pro menus appear at the top of the screen. 5. Tap the Mode menu and then tap the Initialize option to initialize DeLorme's GPS receiver 6. If you want to track using your Route Directions, tap the Directions menu option to view the route that you created in Topo USA. As you travel, Solus Pro highlights the next road you will use and beeps 60 seconds before your next route change. The Directions include your Start, the road name and type for each leg of your journey, the cumulative elapsed time and distance after each leg, the general heading for each leg, any Stops you have added, and your Finish. Tap the scrollbar arrows on the right to move up and down through the Directions or use the organizer's scroll buttons. Symbols appear along the left side of the Directions. Solid circles represent your Start, Stops and Finish. A dotted single line indicates a local road or ferry, a solid double line indicates a US highway or interstate, a single solid, thick line indicates a state route or major connector, a single solid, thin line indicates a forest road, and a solid double line with a dollar sign indicates a toll road. Your GPS status is displayed in the upper right corner. A circle with a line through it means that DeLorme's GPS receiver has not been detected or you are not receiving enough information to determine a fix. The transmitting symbol indicates that DeLorme's GPS receiver is acquiring satellite information, but is not yet receiving sufficient satellite data to determine your position. This message is displayed while DeLorme's GPS receiver is acquiring satellite data and can take several minutes. "2-D" indicates that you are receiving data, but it is not sufficient to determine your elevation. "3-D" indicates that you are receiving ample data and have a good fix. 7. You can also track in the Navigate mode. Tap the Navigate menu option to view your current route status. The instructions for your next route change appear at the top of the screen and update as you travel. Use the arrows in the output boxes to select from a variety of options that you can display in the Navigate screen. 8. Tap the Map menu option to view your current position on the map. NOTE: In order to conserve batteries, be sure to disconnect the adapter cable when not using DeLorme's GPS receiver with your organizer.

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L4: Entry 1 of 2 File: USPT Nov 20, 2001

DOCUMENT-IDENTIFIER: US 6321158 B1
TITLE: Integrated routing/mapping information

Brief Summary Text (15):
It is an object of the present invention to provide a new integrated routing/mapping information system (IRMIS) capable of enabling the mating and cooperation between desktop and handheld devices, including the automatic updating of related databases whenever the desktop PC and handheld PDA link together. The PDA or handheld personal organizer may be optionally linked to a GPS receiver. It is also an object of the present invention to provide the means to take advantage of the strengths of the desktop or home-base application which provides wider geographical coverage and a fully implemented map/route/point-of-interest (poi) cartographic system, which desktop enables user selectivity or customization of map and route information--optionally tapping into online information. It is another object of the present invention to create data-cutting alternatives such that certain user selections of geographic area, start, finish, POIs, levels of detail or map magnitudes may be effectively downloaded to the PDA/GPS that produce compact map and/or route information "packages" comprising black-white bitmaps, text directions lists, point information organized in differential magnitude configurations which e.g. provide more detail and particular kinds of information around waypoints, less detail and perhaps more major road driving information along the routes between waypoints. It is a further object of the present invention to provide a means to enable a PDA to display text directions and maps (without GPS), serving similar functions to map/itinerary travel plan printouts and to facilitate in a PDA/GPS combination a map display of user's current position, and/or prompting and beeped warnings relative to text directions, as well as heading, distance, speed and other real time GPS data. The present invention is further designed to facilitate in a PDA/GPS configuration location marking and breadcrumb or GPS log functions which can be displayed on the PDA and/or uploaded, displayed, and otherwise processed back at the home-base desktop. Yet a further object of the present invention is the development of a PDA/GPS application can include programming whereby the GPS output controls map/point/route information content and levels of detail--as illustrated by "automatic zoom" upon arrival at area mapped at lesser/greater level of detail or, when a GPS receiving system "senses" that the vehicle has slowed down or stopped, map and point information displays automatically refocus or "look about" to see about restaurants, lodgings or other area attractions.

Brief Summary Text (17):
A further object of the invention is to provide an IRMIS for use with radio location systems, dead reckoning location systems, and hybrid location systems for displaying user location. For example, the GPS satellite system can be used for displaying the location, direction of travel, route, speed, and other travel data of an IRMIS user on a generalized grid quadrangle for correlation of user location on a coinciding printed map. Such is accomplished by direct sensory, visual, and intuitive methods. As well, the GPS satellite system may be used in the field for recording waypoint data and limited routing data of an IRMIS user for later data transfer and IRMIS computer display. Additionally, the GPS satellite system may be used in the field for updating waypoint data and limited routing data of an IRMIS user for immediate data transfer via wireless data communications from a remote

field location to an IRMIS desktop platform.

Brief Summary Text (20):
Another advantage is that IRMIS users in the field may simultaneously navigate a travel route generated by IRMIS software while recording or tracking locations or sequences of locations. Such locations may be designated by the user as new POIs and sequences of locations may be transferred from the GPS receiver to the IRMIS desktop platform as an ordered waypoint list that designates a new travel route. Further, fast and accurate surveying is enabled from GPS receiver location recording data made by the user in the field when transferred to the IRMIS desktop platform for computerized data mapping by the IRMIS software.

Detailed Description Text (3):
Included for use with IRMIS 100, the desktop computer 105 is integrated with a handheld or palmtop personal organizer PC, also known as a personal digital assistant or PDA, as shown at 102, in a cradle facilitating connection 106 with the desktop. This PDA, at 102, is detachable for portable use, typically in conjunction with a GPS or equivalent position information device as described hereafter. The "home-base" desktop personal computer system 105 and the detachable PDA communicate at 106 in FIG. 1A via plug-in wiring. The desktop/PDA interface 106 can be any means which facilitates data transfer including wireless infra-red, diverse kinds of wireless and other modems, and data transfer by various intermediate memory storage devices e.g. diskettes, PCMCIA cards and so forth. This communication interface between the portable PDA and home-base desktop facilitate transfer of a wide range of geographic data--including map, route, or point information--and other information. For example, maps of an area of interest to the user can be selected on the desktop and downloaded to the PDA for portable use. Information recorded on the detached PDA 102 at remote locations, including annotated location marks and recorded "breadcrumbs" or points along an actual path of travel for example, can be brought back to and then transferred into the desktop 105 via the data transfer interface 106.

Detailed Description Text (23):
FIG. 1A1 also shows connection of a portable IRMIS device to a GPS or Global Positioning System peripheral device. DeLorme Publishing Company, Inc., for example, provides GPSTRIPMATE.TM. and EARTHMATE.TM. GPS receiver accessories for personal computers that provide data on current position, altitude based on radio signals from a set of satellites. The GPS receivers further provide very exact date/time information and compute information including the direction and rate of travel, time and distance to and from start or finish or intermediate waypoints along a planned travel route or course. Alternative position-sensing devices include loran, other radio location, dead-reckoning, and hybrid systems.

Detailed Description Text (225):
FIG. 1C also reveals the basic user interface, including a higher magnitude or closer scale map, as shown at 135. Compared to FIG. 1B, FIG. 1C offers a main electronic map display with more detail including geometric symbols in small rectangles under "Seattle" for example. These symbols represent the availability of supplemental travel information on specific types of locations e.g. Hotels, Campgrounds, Restaurants and Points of Interest. One such symbol indicating a realtime or recorded location as sensed by a GPS receiver interfacing with IRMIS is shown at 136a. As disclosed hereafter, the user can access and manipulate the added multimedia travel information by various mouse or keyed commands.

Detailed Description Text (231):
FIG. 1N alternatively shows one or more digital desktop displays. The highlighted route up the center can represent a set of "breadcrumbs", or an actual path of travel logged on an IRMIS PDA/GPS, and transferred to the home-base desktop computer component of IRMIS. Some or all of the digital photos, and/or "map notes" or text POI information boxes, on the left side of FIG. 1N can also reflect PDA/GPS

utilization according to the IRMIS invention. For example, the picture of "115 Jones St." could be a digital photo taken with a camera device linked with an IRMIS PDA/GPS in the field. The PDA/GPS recorded the precise date, time, and geographic coordinates of the digital photo for later transfer to, processing and display on the IRMIS desktop. The digital photo was tagged or electronically stamped with the GPS-generated information by the connected PDA/GPS unit, at the time and place it was taken--then transferred from the digital camera to the IRMIS desktop.

Detailed Description Text (251):
In the examples just cited, the geographic content of the subsequent multimedia presentation is circumscribed by the prior routing operation. As detailed hereafter, location data from the routing subsystem 205 focuses or sets the overall agenda for the following multimedia show about places nearby the computed route. This location data comes to step 243, to become multimedia input, through the interaction bus 237, via procedural and data transfer pathways at 261 and 241. Any resulting multimedia presentations are no longer pure, in the language of this disclosure. Rather the multimedia has been combined with, and derives its geographic context or structure from, the prior routing operation. Routing operations are also preceded by multimedia in other applications or uses of the invention 200, as disclosed hereafter. In those cases, the geographic context of the subsequent routing follows the lead, i.e., the locational focus of the prior multimedia.

Detailed Description Text (271):
The invention 200 also provides for selectivity, flexibility and iteration in composing operational sequences so that the user can engage in extended integrated series of operations to develop and refine a single personalized travel plan. Such unique custom or individualized travel plans typically culminate from sequences of pure or combined multimedia or routing operations. The system 200 is interactive, i.e., enabling the user to control operational content, sequencing, parameters and media. This disclosure uses the term "interactivity" to describe how the system 200 provides for flexible ongoing user control over the order or sequencing of operations, and the exercise of optional commands and parameters, shown generally at 211, 215 and 219. User options are described further relative to FIGS. 1B-1M and 1-O to 1P which picture the user interface for one embodiment. Command and parameter options that influence multimedia or routing format, content or sequencing are also disclosed in relation to FIGS. 3, 4, 7, 8A-8E. For one example, the user can calibrate or adjust the module for routing calculations, at 245 in FIG. 2, to get the quickest or shortest travel route, or other preferred or optimal parameters for routing computations, as detailed relative to FIG. 4. For another example, paths 233, 235, 261, 263, 267, 241, 251 and 269 comprise optional pathways for the transfer of location data and travel information in various media between the routing 205 and the multimedia subsystems. Selecting among these pathways, the user controls sequencing, combination and iteration of multimedia and/or routing, as detailed hereafter. Also, alternative options to start and stop operations shown at 203, 204, 275, 277 and 279 facilitate user control over operational arrangements as well as input and output formats. Moreover, the user exercises flexible controls over the medium, topical focus and substantive content of the geographic information or travel presentations which are generated in the multimedia subsystem 209 in FIG. 2, described hereafter in more detail relative to FIGS. 8A-8E.

Detailed Description Text (275):
FIG. 2 depicts the flexibility or user options as provided by the invention 200 for variable or custom sequences of routing and multimedia operations. For one instance, having done no more than enter Boston as the starting point plus New York City as the final destination in the waypoint input module 231, the user can choose to transfer operations and data via paths 233 and 241, and prompt multimedia presentations on the attractions, accommodations and other geographically located information about Boston or New York City, which are stored in the IRMIS database. This option is further described in relation to FIG. 4, particularly step 431.

Alternatively, the user can opt to transfer to the multimedia 209 only after computing and displaying an optimal route from Boston to New York through steps 245 and 259 in FIG. 2. Then, paths 261 and 241 enable access to a variety of subsequent multimedia about Boston, New York City, or points of interest or POIs found along or within a certain user-defined region around the optimal route. FIG. 4 especially step 471, FIGS. 5, 6A and 6B, and related text, further specify this process whereby POIs are found or located along the way or within a user-defined distance from a computed route or its component waypoints. In sum, the sequences of operations discussed in this paragraph generally reduce in the shorthand notation as follows: R1, M1=C01. The one multimedia operation, following one prior substantial routing computation or waypoint input operation, logically generates combined output 265 via path 251, the interaction bus 237 and path 263.

Detailed Description Text (282):
FIG. 2A shows the steps of user selection, automated data extraction, cutting, compression, coordination, and elimination of duplication which proceed transfer of dataset(s) of map, route, and/or point information from IRMIS home-base desktop to portable PDA for use in the field.

Detailed Description Text (283):
FIG. 2B illustrates transfer of GPS log records and/or POI location marks and annotations from PDA respectively to the route and point data processing parts of the desktop GIS or geographic information system. At 295 and 298 are illustrated the process of "hot-synching" or the automated one or two way coordination or "updating" of one or more selected, corresponding dataset(s) in a linked PDA and desktop.

Detailed Description Text (285):
In FIG. 2A, the desktop geographic information system for routing and multimedia operations preferrably comprises a large-scale (e.g. national) map and point information database. The user considers and selects points of interest, computes optimal route and travel plans often by repeated iterations and editing, and at the user's option chooses and attaches multimedia or POI information--at 285. The user can then opt to transfer one or more map, route and/or point information "packages" or datasets into the companion, portable PDA at 290.

Detailed Description Text (290):
As shown at 297 and 298, such transfers between the PDA and desktop can be one-way, at the user's option, or programmed for automatic transfer whenever the PDA "docks" or connects with the desktop. The two-way arrow at 299 illustrates "synchronization" i.e. automated two-way or mutual updating of specific, congruent dataset(s) in the desktop and PDA e.g. "Set A" at 296 and at 295 respectively. Thus, changes in the user's address book, travel plans, map configurations, and/or point information can be made to match on both the desktop and PDA. "Synchronization" of this kind can be one-way, two-way, automatic, and/or subject to user confirmation. For example, the IRMIS PDA might be programmed to automatically transfer any and all new digital photos--the date, time and location--taken by a digital camera, connected to and used in conjunction with the IRMIS PDA/GPS in the field.

Detailed Description Text (292):
FIG. 3 is a flow chart illustrating the organization and procedural logic of the commands or user options available to multimedia users of the preferred embodiment of IRMIS. The system combines multimedia and routing to provide a software utility for personal and business travel planning. FIG. 3 depicts data transfer pathways as well as the hierarchy of commands and user options available to users in the Points of Interest system listbox or dialog box shown in FIG. 1J. In the multimedia mode, the user can call up this dialog box on top of the map display that typically dominates the computer screen.

Detailed Description Text (304):
In the lexicon of this disclosure, attaching multimedia refers to the process of picking, transferring and displaying multimedia about particular POIs or locations through the interaction block 207 for inclusion upon travel plan output at 265 with reference to FIG. 2. Attached multimedia can comprise text annotations about POIs with graphic arrows or pointers indicating the site or geographic location of specific POIs on travel plans in the form of map hardcopy or map display output on which one or more routes are highlighted, as shown in FIG. 1N. Other embodiments enable attachment of still or moving images, sound, and various other media to travel plan output. Though such multimedia attachments invariably modify the informational content of travel plans, the definitive feature of travel plans with attached multimedia is that the highlighted computed optimal routing component has not been altered by modification of the waypoint lists.

Detailed Description Text (316):
In FIG. 4, steps 406 and 409 mean that the user can opt to exit from or close the waypoint input module. Like virtually all operations embodying the invention, waypoint input is achieved on top of a computer map display, which becomes part of the waypoint input interface, as described hereafter. In the lexicon of this disclosure, waypoints are route input items including one point of departure, one final destination and, optionally, one or more intermediate loci entered in order of travel. Waypoints are highlighted as input with inverted green triangle symbols on the map display as shown at 147 in FIG. 1G. As entered, waypoints also appear on a list in the order to be encountered on the intended journey, as shown in the Manage Route dialog box illustrated at 138 in FIG. 1G. The list of waypoints arranged in planned order of travel in the Manage Route dialog box corresponds to step 411 in FIG. 4. The user works in the waypoint entry module or command suite until he or she elects to close the function at 406 and 409, or to compute a route at 433, or to transfer waypoint input through 431 in order to experience selected multimedia information about the waypoint locations and nearby places.

Detailed Description Text (322):
In enhanced versions, step 431 facilitates the transfer and transformation of ordinally structured waypoint input data over through the interaction subsystem 207 into the multimedia subsystem 209 so that the user can browse multimedia information about the input waypoint locations. Transformation of the waypoint input into the POI or multimedia input format is involved, as detailed hereafter in relation to FIGS. 5, 6A and 6B. Step 431 in FIG. 4 approximates pathways 233 and 241, as shown in FIG. 2. Step 431 in FIG. 4 concerns waypoint input only, in advance of any routing computation based on said input. Step 471 transfers output from subsequent routing computations for multimedia exposition. Step 431 further enables the user to intelligently refine his or her current waypoint list by prompting and experiencing selected multimedia information on chosen waypoints. In response to such multimedia information, the user can return to the waypoint input module via 403 to make informed choices about waypoints to keep or delete and the order of travel.

Detailed Description Text (327):
Such service and delivery personnel will find the IRMIS PDA and/or PDA/GPS devices particularly useful. After using the IRMIS desktop for more complicated client and/or address list processing, and one or more iterations of related route-planning, the delivery or sales call route(s) for the day or week can be selected, refined, compacted and transferred to compatible portable IRMIS PDA or PDA/GPS devices, as detailed particularly relatively to FIGS. 2A and 5D-5F in this disclosure. Then, the sales or service workers can take the IRMIS PDA or PDA/GPS device--loaded with one or more sets of map, route and/or point information, along on the road, e.g., for route guidance. Moreover, the portable IRMIS devices can be used in the field to track actual paths of travel, to mark locations, and/or for point information annotations, which data as recorded at remote locations can be transferred to the IRMIS home-base desktop for further display and processing, as

detailed herein particularly relative to FIGS. 1A3 and 2B.

Detailed Description Text (336):
For another example of combined operation output at step 453, path 403 facilitates the user transferring POI data from the multimedia subsystem 209 through the interaction subsystem 207 to become new waypoint input, either expanding or shortening the current list of waypoint inputs. Any resulting routing computation and its ensuing output at step 453, which are based on this new list of waypoints, therefore incorporate the user's responses to and interaction with the preceding multimedia transferred to the routing subsystem 205 via path 403. Relative to route output/display at 453 in FIG. 4C, IRMIS embodiments preferably provide users with some control options or command means (dialog boxes, menus, keystroke sequences, . . . etc.) in order to select various outputs or output combinations. Thus users can select levels of detail, various map printouts and displays, text directions, lists of attachments, supplemental information on POIs, audio and/or graphics. At 463, users can additionally or alternatively command IRMIS electronic digital output: e.g. (1) transferring map, route, and/or point information into an IRMIS PDA interfacing the IRMIS desktop--for portable use in the field; or (2) transmission of IRMIS output to other computers. IRMIS invention further facilitates transfer of point information, like multimedia on POIs, to portable IRMIS devices from the IRMIS desktop or home-base. Such map, routing and/or point information can be used on one or more IRMIS PDA devices (with or without GPS).

Detailed Description Text (347):
The IRMIS invention preferably manages more geographically extensive and data-processing intensive multimedia and/or routing operations on more powerful, desktop, home-base or central dispatch IRMIS computers. Portable IRMIS PDA and PDA/GPS devices are put to work in remote locations with one or more selected, simplified and compacted IRMIS datasets preferably made on the IRMIS desktop. The IRMIS PDA and PDA/GPS devices can be used in the field to log travel paths, mark locations, annotate maps, or enter graphic or text information on geographic points or POIs, as well as for location information and route guidance. The route, point and/or map information so gathered on IRMIS portable devices in the field can be transferred into the home-base or central dispatch IRMIS desktop, then further processed as just described relative to FIG. 4. The transformation and transfer of point, route and/or point information between IRMIS desktop, home-base or service bureau platforms and said portable IRMIS PDA or PDA/GPS devices are further described in other parts of this disclosure, particularly relative to IRMIS FIGS. 2A-2B and 5D-5F.

Detailed Description Text (349):
FIG. 5 illustrates cartographic data structures as seen on typical map/route display output in 501 in the upper left drawing. Underlying cartographic data arrangements, typically not seen by the user are shown at 526 (upper right), 551 (lower left) and 576 (lower right) of FIGS. 5A, 5B, and 5C. They are used in alternative embodiments of the present invention to interrelate nodes or routes with POIs found in one or more user-defined regions around an ordinal series of entered waypoints or along a previously computed route. FIGS. 5, 5A, 5B, and 5C help to explain how the present invention enables the user to transfer from substantial routing operations over into the multimedia mode to experience multimedia presentations about POIs or points of interest located within a certain distance of a previously computed route or input waypoint list. These figures reveal general geographical data formats whereby prior route output or substantial waypoint input is transformed into a list of POIs, situated around or along the previous routing output or waypoint list. Data transformations in this manner are done in anticipation of the user selectively playing multimedia information concerning the POIs on the resulting POI list.

Detailed Description Text (376):
FIGS. 6A through 8E depict routing/multimedia operations which are preferably

performed upon IRMIS desktop or home-base platforms with their larger computing power and access to more extensive geographically-related databases. Moreover, the route-related multimedia presentations described relative to FIGS. 6A-8E, while advantageous for travel planning, are not essential operations on the IRMIS desktop in the preparation of travel plan output from which map, route and/or pint information datasets can be cut for use on portable IRMIS PDA or PDA/GPS devices. Portable information packages or datasets, according to the present IRMIS invention, preferably are cut from desktop IRMIS travel plans comprising map, route and/or point information concerning at least one starting pint and one destination on a proposed, computed or actual route of travel. The present IRMIS invention can further comprise information recorded on PDA or PDA/GPS devices at remote locations in the field. For example, users of portable IRMIS PDAs can make annotations about geographic locations and travel routes; and IRMIS PDA/GPS devices facilitate marking locations, tracking or logging "breadcrumbs" or series of points representing actual travel paths, plus date/time/lat-long stamping of user annotations and/or digital photos made in conjunction with the PDA/GPS. Thereafter, such information gathered on one or more portable IRMIS devices can be transferred into the IRMIS desktop or central dispatch system for further processing or display. For example, such information can be used to update real estate, security service, sales/delivery route, etc. databases; such information can be used to display a historical record or replay of part or all of an actual trip; and/or such information can be incorporated within the IRMIS desktop GIS database for use in future travel planning or multimedia/routing operations and presentations.

Detailed Description Text (409):
Alternate embodiments of the present invention additionally facilitate editing and amendment of text attachments, attachment of selected visual images or audio output, and the insertion or input of new or supplemental multimedia located information through obvious, routine state of the art programming techniques for storage, retrieval and modification of multimedia data. For example, as detailed in relation to FIG. 4 and illustrated in FIG. 1N, embodiments for sales, real estate or security agents attach digital photo images, or even video clips, of particular properties or people at the appropriate locations on specialized travel plan outputs. Available technology further permits attachment of audio messages to travel plan output at relevant locations. Emergency or delivery personnel can recall and hear crucial client messages or instructions in relation to the known or estimated location of an emergency or delivery event. Relative to specific geographic locations, personal snapshots or video, voice/audio experiences recorded on tape or text recollections can be input, stored and recalled, utilizing the present invention as a digital travel album. Such diverse contents and media can be modified, revised and composed selectively together employing obvious, state of the art techniques for the computerized manipulation of interrelated text, graphic imagery or audio data.

Detailed Description Text (410):
The present IRMIS invention further comprises information recorded on PDA or PDA/GPS devices at remote locations in the field. For example, users of portable IRMIS PDAs can make annotations about geographic locations and travel routes, and IRMIS PDA/GPS devices facilitate marking locations, tracking or logging "breadcrumbs" or series of points representing actual travel paths, plus date/time/lat-long stamping of user annotations and/or digital photos made in conjunction with the PDA/GPS. Thereafter, such information gathered on one or more portable IRMIS devices can be transferred into the IRMIS desktop or central dispatch system for further processing and display. For example, such information can be used to update real estate, security service, sales/delivery route, etc., databases; such information can be used to display a historical record or replay of part or all of an actual trip, and/or such information can be incorporated within the IRMIS desktop GIS database for use in future travel planning or multimedia/routing operations and presentations.

Detailed Description Text (412):
According to the present IRMIS invention, the CD-ROM data-updating or Replace functions are further supplemented and improved upon by automated data coordination between the desktop or central dispatch IRMIS home-base platform and the datasets or information transferred into and/or recorded on one or more portable IRMIS PDA or PDA/GPS devices. As detailed relative to FIG. 2B in this disclosure, this data coordination or integration between IRMIS home-base and IRMIS portable(s) comprises optional, controllable one-way or two-way synchronization of selected component databases, e.g., maps, text directions, address books, route depictions, POI or point information, digital photo data, and so forth. Thus, information recorded on portable IRMIS devices at remote locations can be automatically incorporated into corresponding databases on the IRMIS desktop or central dispatch computer; also, at the user's option, upon "docking" with the IRMIS "mothership" or desktop, portable IRMIS devices can be automatically updated and reset in preparation for further use.

Detailed Description Paragraph Table (1):
To send a route 1. Be sure that the Solus Pro application is installed on both your desktop computer and your handheld computer. 2. Create your route in Topo USA. 3. Click the Send Route button in the Advanced Routing dialog box. 4. The Send Route dialog box appears. 5. Select the desired options (i.e., current map view, route map and Route Directions) and the type of platform. 6. Click the Preferences . . . button to set your preferences for the individual devices. 7. Click OK. 8. Topo USA creates the appropriate files and displays a message box telling you where they were saved. The default location is C:.backslash.DeLorme Mobile Maps. 9. Transfer the files to your handheld computer according to the protocol outlined in its user's guide. 10. When the transfer is complete, open the Solus Pro application on your handheld computer by tapping its icon. NOTE: You can send the current map view without creating a route. Adjust the map view to the desired location and click the Send Route tool. NOTE: If you open a previously saved route to send to a handheld computer, you must be using the appropriate CD for the region containing the route.

CLAIMS:

2. The IRMIS of claim 1 wherein said database further includes information on points of interest along said travel route, wherein said IRMIS software provides for selectable transfer of said information on said points of interest along said travel route from said first digital computer to said second digital computer.

3. The IRMIS of claim 2 further comprising means for coupling said second digital computer to a geocoding device for recording location information associated with said travel route, wherein said IRMIS software provides for transfer of said location information from said second digital computer to said first digital computer.

10. The IRMIS of claim 9 further comprising means for coupling one or more of said other computers to a geocoding device for recording location information associated with said travel route, wherein said IRMIS software provides for transfer of said location information from said one or more other computers to said digital computer.

13. The IRMIS of claim 8 where said database further includes information on points of interest along said travel route, wherein said IRMIS software provides for selectable transfer of said information on said points of interest along said travel route from said digital computer to said one or other computers.